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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/636,025	08/07/2003	Leif Fredin	065823.0110	1031
23640	7590	12/29/2004	EXAMINER	
BAKER BOTTS, LLP			PRITCHETT, JOSHUA L	
910 LOUISIANA			ART UNIT	
HOUSTON, TX 77002-4995			PAPER NUMBER	

2872

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/636,025

Applicant(s)

FREDIN ET AL.

Examiner

Joshua L Pritchett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to Amendment filed September 22, 2004. Claims 1 and 8 have been amended and claims 2-7 and 9 have been cancelled as requested by the applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sai (US 5,449,233).

Regarding claim 1, Sai teaches a system for measuring optical characteristics comprising a laser (10) producing an excitation signal; a first frequency generator (128, ϕ_1) that modulates the laser; a splitter (12) that reflects a reference signal and transmits an interrogation signal (Fig. 5); a single mode optical fiber (14) coupled to the laser so that a coupled excitation signal is introduced into the optical fiber, wherein the coupled excitation signal is a continuous wave signal modulated at variable frequencies (Fig. 5); a first detector (102) positioned to receive a radiation backscattered by the optical fiber in response to the couple excitation signal and to

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output a first detector signal (Fig. 5); a second frequency modulator (128, ϕ_2) phase locked to the first frequency generator and producing a second signal (col. 12 lines 2-7); a first mixer (114) for receiving the first detector signal and the second signal and for outputting a first mixed signal (Ada); a second mixer (124) for receiving the reference signal and the second signal and for outputting a second mixed signal (Ads); a low pass filter (16) an analog-to-digital converter (108, 112, 118, 122), a fast Fourier transform circuit or computer hardware equivalent (126), and a peak capture circuit or computer hardware equivalent (126); and a divider circuit or computer hardware equivalent (126). Sai lacks specific reference to the computer hardware performing the claimed function. It is extremely well known in the art that computers are capable of performing the claimed functions and calculations of the current invention. Official Notice is taken. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Sai computer hardware equivalent perform the claimed tasks as is known in the art for the purpose of limiting the number of separate devices used to measure the optical signals.

Regarding claim 8, Sai teaches the claimed invention including the divider, filter, converter and circuits except for the duplication of the first mixer to create a third mixer. The first mixer and the third mixer are the same in that both of them are used to combine the backscattered light from the optical fiber and the second signal. It would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the first mixer, since it have been held that a mere duplication of working parts of a device involves only routine skill in the art. One would have been motivated to duplicate the first mixer to create the third mixer for the purpose of creating a redundant back up of the first mixer in case the first mixer became inoperable.

Response to Arguments

Applicant's arguments, see Amendment, filed September 22, 2004, with respect to the drawings have been fully considered and are persuasive. The objection of the drawings has been withdrawn.

Applicant's arguments, see Amendment, filed September 22, 2004, with respect to the rejection(s) of claim(s) 1 under Wong have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration of the newly amended claims, a new ground(s) of rejection is made in view of Sai (US 5,449,233).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L Pritchett whose telephone number is 571-272-2318.

The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP *JP*


DREW A. DUNN
SUPERVISORY PATENT EXAMINER